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Twenty-ninth day of October 2004

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PROVISIONAL SPECIFICATION

Applicant(s) :

INLINK TECHNOLOGIES PTY LTD

Invention Title:

A SYSTEM AND METHOD FOR FORMING INFORMATION
PERTAINING TO A TRANSPORTATION DEVICE

The invention is described in the following statement:

A SYSTEM AND METHOD FOR FORMING INFORMATION PERTAINING TO A
TRANSPORTATION DEVICE

5 FIELD OF THE INVENTION

The present invention relates generally to a system and method for forming information pertaining to a transportation device. The system and method of the present 10 invention have particular, but by no means exclusive, application to forming information comprising audiovisual information, status information about the transportation device and personal information about a user of the transportation device.

15

BACKGROUND OF THE INVENTION

Collecting information pertaining to a transportation device (such as an elevator, escalator or moving walkway) is desirable for several reasons. For example, collecting audiovisual information concerning occupants of the elevator is particularly useful for security and safety systems. More specifically, being able to collect video footage of the occupants inside the 25 elevator enables security officers to identify occupants who may, for instance, vandalise the passenger area of the elevator. The ability to collect audio information from the occupants of the elevator enables, for example, an emergency call centre operator to communicate with the 30 occupants in the event of the elevator unexpectedly breaking down and trapping occupants therein. Other information relating to the elevator that may be desirable to collect includes information pertaining to the status of the elevator. For example, status information would 35 typically allow a maintenance engineer to readily determine the status of the elevator, such as the floor at which the elevator is located or any faults identified with the

elevator system. Additionally, personal information relating to the users of a transportation device can be particularly useful for security systems and would enable security officers to determine which users are using the
5 transportation device at any particular time and/or to store a history of usage for future reference.

SUMMARY OF THE INVENTION

10 According to a first aspect of the present invention, there is provided a system for forming information pertaining to a transportation device, the system comprising:

15 obtaining means arranged to obtain first information which is related to a person using the transportation device, and second information about a status of the transportation device; and

20 associating means arranged to create an association between the first information and the second information, to thereby form the information pertaining to the transportation device.

25 Thus, the association enables an entity to readily determine the second information that is associated with the first information, or visa versa.

30 Preferably, the obtaining means is arranged to obtain the first information and the second information from an information capture system that is remote to obtaining means.

Alternatively, the information capture system could in fact be part of the obtaining means.

35 Preferably, the obtaining means comprises a communications interface arranged such that the obtaining means can obtain the first information and the second

information from the information capture system.

Preferably, the communication interface is arranged to communicate with the information capture system 5 using Ethernet.

Alternatively, the communication interface is arranged to communicate with the information capture system using other communication technologies, for example fibre 10 optic communication.

Preferably, the associating means is arranged to create the association by assigning first data to the first information and second data to the second information, 15 wherein the first data and the second data correspond substantially with each other.

Alternatively, the associating means is arranged to create the association by inserting the second 20 information about the status of the transportation device in to the first information related to the person.

Preferably, the first data and the second data each comprise a time and/or date stamp.

25 Alternatively, the first data and the second data each comprise a tag or identifier that is made up of a series of selected numerals and/or letters.

30 Preferably, the system further comprises a storage means arranged to store the first information, second information and the association.

35 Preferably, the storage means comprises a database.

Alternatively, the storage means comprises a

storage medium such as a CD-ROM or hard disk.

Preferably, the system further comprises access means arranged such that an entity can access the first information, second information and the association when stored in the storage means.

Preferably, the access means is arranged such that the entity can access the first information, second information and the association from a device remote from the storage means.

Alternatively, the access means is arranged to enable the device to have local access to the storage means.

Preferably, the access means is arranged to communicate with the device via an Internet.

Preferably, the first information comprises video and/or audio information, and the second information comprises a direction, floor position, door status and mode of the elevator, and fault related data.

Preferably, the second information also comprises security related information.

Preferably, the security related information comprises personal information.

Preferably, the associating means is further arranged to create an association between the security related information and the video and/or audio information.

Preferably, the transportation device comprises an elevator, escalator or a moving walkway.

According to a second aspect of the present invention, there is provided a method of forming information pertaining to a transportation device, the method comprising the steps of:

5 obtaining first information which is related to a person using the transportation device, and second information about a status of the transportation device; and

10 creating an association between the first information and the second information, to thereby form the information pertaining to the transportation device.

Preferably, the obtaining step comprises the step of obtaining the first information and the second information from an information capture system that is remote to obtaining means.

20 Preferably, the obtaining step comprises the step of using a communications interface to obtain the first information and the second information from the information capture system.

25 Preferably, the communication interface is arranged to communicate with the information capture system using Ethernet.

30 Preferably, the creating step comprises the step of creating the association by assigning first data to the first information and second data to the second information, wherein the first data and the second data correspond substantially with each other.

35 Preferably, the first data and the second data each comprise a time and/or date stamp.

35 Preferably, the method further comprises the step of storing the first information, second information and

the association in a storage means.

Preferably, the storage means comprises a database.

5

Preferably, the method further comprises the step of accessing the first information, second information and the association when stored in the storage means.

10

Preferably, the accessing step comprises the step of accessing the first information, second information and the association from a device remote from the storage means.

15

Preferably, the first information comprises video and/or audio information, and the second information comprises a direction, floor position, door status and mode of the elevator, and fault related data.

20

Preferably, the second information also comprises security related information.

Preferably, the security related information comprises personal information.

25

Preferably, the step of creating an association further comprises the step of creating an association between the security related information and the video and/or audio information.

30

Preferably, the transportation device comprises an elevator, an escalator or a moving walkway.

35

According to a third aspect of the present system, there is provided software comprising instructions that enable a computer system to perform the method according to the first aspect of the present invention.

According to a fourth aspect of the present invention, there is provided a computer readable medium comprising the software according to the third aspect of
5 the present invention.

BRIEF DESCRIPTION OF THE FIGURES

Notwithstanding any other embodiments that may
10 fall within the scope of the present invention, an embodiment of the present invention will now be described, by way of example only, with reference to the accompanying figure 1, which provides a schematic diagram of a system according to an embodiment of the present invention.
15

AN EMBODIMENT OF THE PRESENT INVENTION

As can be seen in figure 1, which provides a schematic diagram of a system 1 according to an embodiment
20 of the present invention, the system 1 comprises: a building server 3; an elevator interface system 5; an elevator client 7; a communication switch 9; and communication links 11.

The elevator client 7 is located on the elevator
25 13 and is essentially concerned with creating first information related to a person in the elevators 13. The first information comprises video and/or audio information, and also comprises security related information such as a security access pass identification number, user name, user address, photo of the user, a scan of a business card of the user or a scan of driver's licence of the user. In order to create the first information, the elevator client 7 comprises a personal computer, a video camera that is connected to the personal computer, and a microphone that is also connected to the personal computer (all of which are not illustrated in figure 1). The video camera and the

microphone are typical of those used in security systems and are arranged to capture video and audio from the passenger area of the elevator 13. The video and audio signals from the video camera and microphone are forwarded 5 to the personal computer. The personal computer comprises a video/audio capture card that processes the video and audio signals from the video camera and microphone to produce a digital version of the video and audio signals. The personal computer is further arranged to place the digital 10 versions of the video and audio signals in to a format that can be transmitted over the communication link 11a in a reliable manner. The communication link 11a is a copper wire located in the travelling cable attached between the elevator 13 and the elevator motor room (not shown in 15 figure 1). The format in to which the personal computer places the digital version of the video signal over the communication link 11a accords with a digital subscriber line format.

20 As can be seen in figure 1, the communication link 11a is connected between the elevator client 7 the communication switches 9. Consequently, the digital versions of the video and audio signals from the video camera and microphone are received by the communication 25 switch 9. Given that the digital versions of the video and audio signals are transmitted over the communication link 11a according to a digital subscriber line format, the communication switch 9 is arranged to process information on the communication link 11a that may be in a digital 30 subscriber line format.

In order to obtain the security related information, the personal computer is interconnected to a security access and user management system which is capable 35 of obtaining the personal information. The security information is sent to the personal computer for processing.

In addition to the elevator client 7, the system 1 also comprises an elevator interface system 5. Effectively, the elevator interface system 5 is in the form 5 of a PC-based programmable logic controller that is used for data acquisition and which is connected to the elevator control system in the elevator motor room (all of which are not shown in figure 1). The programmable logic controller is arranged to create the second information regarding the 10 status of the elevator 13. The second information comprises elevator status information such as direction, floor position, door status or mode of the elevator. The second information also contains security related information, such as swipe card access usage.

15

The elevator interface system 5 comprises a communication interface that is capable of arranging the second information in to a format that accords with the Ethernet format. The communication interface is such that 20 it places the second information on to the communication link 11b, which is in the form of an Ethernet cable that is located between the elevator interface system 5 and the communication switch 9.

25

Both the elevator client 7 and the elevator interface system 5 place the first information and second information on to the communication links 11a and 11b, respectively, in a streaming fashion; that is, the elevator client 7 and elevator interface system 5 output the 30 information on a continuos basis.

35

The communication link 11b is connected from the elevator interface system 5 to the communication switch 9a. Consequently, when the elevator interface system 5 places the second information on the communication link 11b it is received by the communication switch 9.

The communication switch 9 is arranged such that upon receiving information from the communication links 11a and 11b (that is, the first information and the second information), it re-directs that information on to 5 communication link 11c. The communication link 11c is in the form of an Ethernet cable. The communication switch 9 places information on to the communication link 11c in the Ethernet format. The communication link 11c is connected to the building server 3; consequently, any information placed 10 on the communication link 11c by the switch 9 will be received by the building server 3. This means that the first information created by the elevator client 7 and the second information created by the elevator interface system 5 will ultimately be received by the building server 3 via 15 the communication link 11c.

The building server 3 comprises an obtaining means which is arranged to enable the building server 3 to obtain the first information (video and audio information) 20 and the second information (elevator status information). Essentially, the obtaining means is in the form of hardware and/or software that is capable of interacting with the communication link 11c in order to retrieve the first information and the second information, which was initially 25 placed on the link 11c by the communication switch 9. The obtaining means is further arranged such that it supports the Ethernet format so that it can decode the information placed on to the link 11c by the switch 9.

30 The building server 3 also comprises an associating means that is arranged to create an association between the first information and the second information retrieved from the communication link 11c by the obtaining means. The associating means is also in the form of 35 hardware and/or software. In order to create the association between the first information and the second information, the associating means essentially marks the

first information and the second information with a time and/or date stamp. The first information and the second information are marked with the time and/or date stamp shortly after the information is obtained by the obtaining 5 means. The building server 3 comprises an internal clock (which is periodically synchronised with a standard time service via the Internet), which the associating means uses to get the time and/or date stamp that is used to mark the first information and the second information.

10

Marking the first information and the second information with a time and/or date stamp provides the advantage of, for example, allowing an entity viewing an image of the elevator 13 (contained in the first 15 information) to readily determine the status of the elevator 13 at an instant when the image was captured. This is achieved by checking for the same or similar time and/or date stamps in the first information and the second information.

20

In addition to the obtaining means and the associating means, the building server 3 comprises a storage means in the form of a database. The building server 3 uses the storage means to store the first 25 information, second information and the association. The building means 3 typically stores information in the storage means in a format that accords with an extensible mark-up language (XML).

30

Typically, the entity logging on to the building server 3 is, for example, a security monitoring system used by a building manager to monitor the elevator 13. The monitoring system would typically present the first information and the second information to the building 35 manager via a computer screen.

The building server 3 comprises an access means

that enables entities to gain access to the storage means in order to access the first information, second information and the association when stored therein.

Essentially, the access means is in the form of
5 hardware/software that enables the entity to log-on to the building server 3 either via a local area network or the Internet and retrieve the first information, second information and the association from the storage means.

10 It will be appreciated by those skilled in the art that whilst the embodiment of the present invention has been described with reference to an elevator, the present invention has application to other transportation devices such as escalators and moving walkways.

15 Those skilled in the art will appreciate that the invention described herein is susceptible to variations and modifications other than those specifically described. It should be understood that the invention includes all such variations and modifications which fall within the spirit and scope of the invention.
20

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A system for forming information pertaining to a transportation device, the system comprising:

5 obtaining means arranged to obtain first information which is related to a person using the transportation device, and second information about a status of the transportation device; and

10 associating means arranged to create an association between the first information and the second information, to thereby form the information pertaining to the transportation device.

15 2. The system as claimed in claim 1, wherein the obtaining means is arranged to obtain the first information and the second information from an information capture system that is remote to obtaining means.

20 3. The system as claimed in claim 1 or 2, wherein the obtaining means comprises a communications interface arranged such that the obtaining means can obtain the first information and the second information from the information capture system.

25 4. The system as claimed in claim 3, wherein the communication interface is arranged to communicate with the information capture system using Ethernet.

30 5. The system as claimed in any one of the preceding claims, wherein the associating means is arranged to create the association by assigning first data to the first information and second data to the second information, wherein the first data and the second data correspond substantially with each other.

35 6. The system as claimed in claim 5, wherein the first data and the second data each comprise a time

and/or date stamp.

7. The system as claimed in any one of the preceding claims, further comprising a storage means
5 arranged to store the first information, second information and the association.

8. The system as claimed in claim 7, wherein the storage means comprises a database.

10

9. The system as claimed in any one of the preceding claims, further comprising access means arranged such that an entity can access the first information, second information and the association when stored in the
15 storage means.

20

10. The system as claimed in claim 9, wherein the access means is arranged such that the entity can access the first information, second information and the association from a device remote from the storage means.

11. The system as claimed in claim 10, wherein the access means is arranged to communicate with the device via an Internet.

25

12. The system as claimed in any one of the preceding claims, wherein the first information comprises video and/or audio information, and the second information comprises a direction, floor position, door status and mode
30 of the elevator, and fault related data.

13. The system as claimed in any one of the preceding claims, wherein the second information also comprises related security information.

35

14. The system as claimed in claim 13, wherein the security related information comprises personal

information.

15. The system as claimed in claim 14, wherein
the associating means is further arranged to create an
5 association between the security related information and
the video and/or audio information.

10 16. The system as claimed in any one of the
preceding claims, wherein the transportation device
comprises an elevator, an escalator or a moving walkway.

15 17. A method of forming information pertaining
to a transportation device, the method comprising the steps
of:

obtaining first information which is related to a
person using the transportation device, and second
information about a status of the transportation device;
and

20 creating an association between the first
information and the second information, to thereby form the
information pertaining to the transportation device.

25 18. The method as claimed in claim 17, wherein
the obtaining step comprises the step of obtaining the
first information and the second information from an
information capture system that is remote to obtaining
means.

30 19. The method as claimed in claim 17 or 18,
wherein the obtaining step comprises the step of using a
communications interface to obtain the first information
and the second information from the information capture
system.

35

20. The method as claimed in claim 19, wherein
the communication interface is arranged to communicate with

the information capture system using Ethernet.

21. The method as claimed in any one of claims
17 to 20, wherein the creating step comprises the step of
5 creating the association by assigning first data to the
first information and second data to the second
information, wherein the first data and the second data
correspond substantially with each other.

10 22. The method as claimed in claim 21, wherein
the first data and the second data each comprise a time
and/or date stamp.

15 23. The method as claimed in any one of claims
17 to 20, further comprising the step of storing the first
information, second information and the association in a
storage means.

20 24. The method as claimed in claim 22, wherein
the storage means comprises a database.

25 25. The method as claimed in any one of claims 22
to 24, wherein the method further comprises the step of
accessing the first information, second information and the
association when stored in the storage means.

30 26. The method as claimed in claim 25, wherein
the accessing step comprises the step of accessing the
first information, second information and the association
from a device remote from the storage means.

35 27. The method as claimed in any one of claims
17 to 26, wherein the first information comprises video
and/or audio information, and the second information
comprises a direction, floor position, door status and mode
of the elevator, and fault related data.

28. The method as claimed in any one of claims
17 to 27, wherein the second information also comprises
security related information.

5 29. The method as claimed in claim 28, wherein
the security related information comprises personal
information.

10 30. The method as claimed in claim 29, wherein
the method comprises the step of creating an association
between the security related information and the video
and/or audio information.

15 31. The method as claimed in any one of claims
17 to 30, wherein the transportation device comprises an
elevator, an escalator or a moving walkway.

20 32. Software comprising instructions that enable
a system to perform the method as claimed in any one of
claims 17 to 30.

33. A computer readable medium comprising the
software as claimed in claim 32.

25 34. The system substantially as herein described
with reference to the accompanying figures.

30 35. The method substantially as herein described
with reference to the accompanying figures.

Dated this 31st day of March 2004

INLINK TECHNOLOGIES PTY LTD

By their Patent Attorneys

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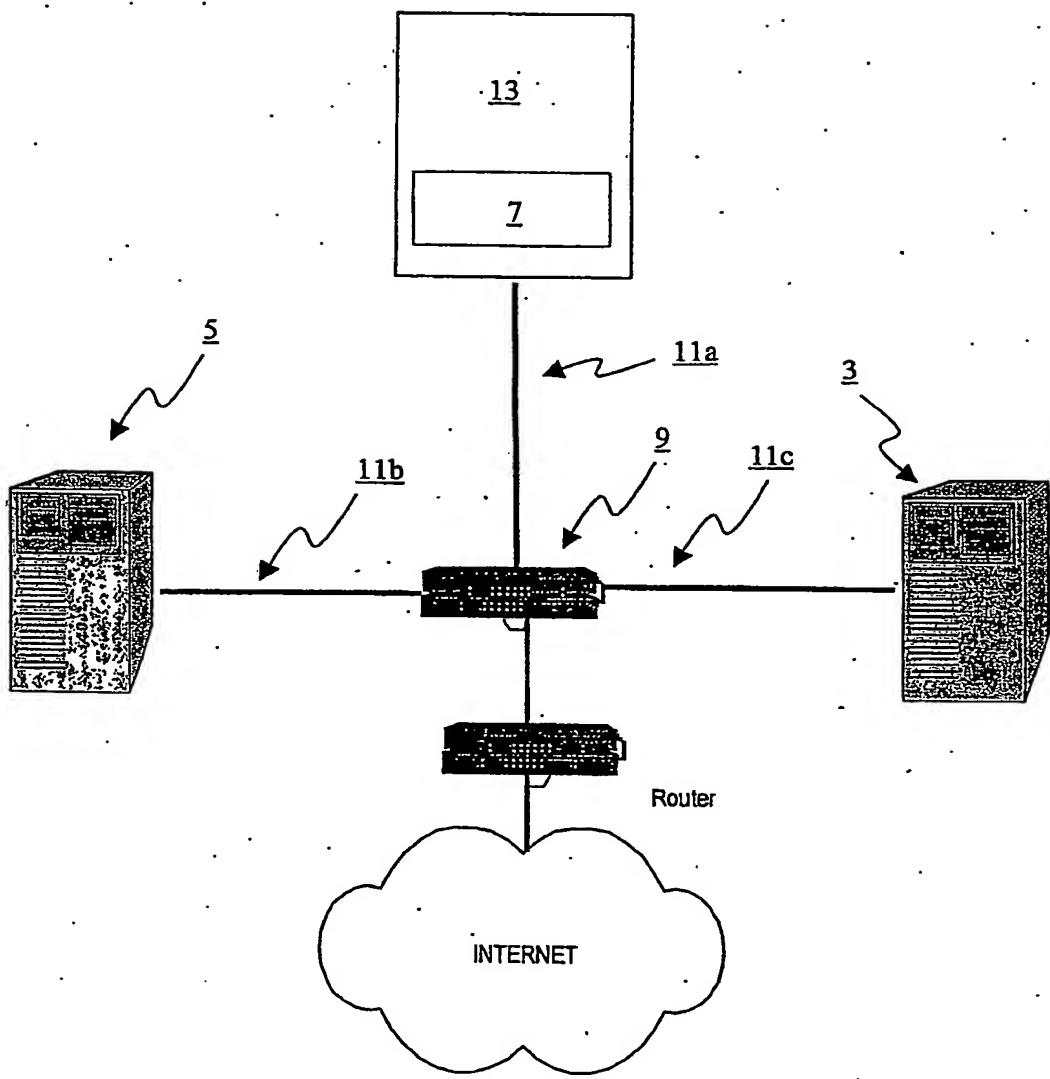


FIGURE 1

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